Spectrum and Indigenous Connectivity: Intervening in ISED Consultation - September 21 2021

Mark Buell
Good afternoon. Good morning, everyone. My name is Mark Buell, the Regional Vice President for North America at the Internet Society. I'd like to thank you for joining us for this panel on spectrum and indigenous connectivity, how it relates to the current ISED consultation.

I don't want to speak too long. But I do want to give a quick plug. If you like what you hear today, please make sure that you register for the upcoming Indigenous Connectivity Summit, October 12 to the 15th. Entirely virtual. Excellent event. This is the fifth year it's been held. So, if you're available, interested, please register. And just a heads up that we are recording this event. But with all of that, I think I'll turn it over to Dr. Gregory Taylor to kick us off.

Dr. Gregory Taylor
Thanks very much, Mark. My name is Greg Taylor, and I'm chiming in from Calgary, Canada, where we had a federal election yesterday, which ended up with us looking a lot like our previous election. So, we have a new government that looks like the old government here. So, nothing too dramatic as far as political change in this country. I'm very happy that I was asked to moderate this panel today on such an important topic, one that I've been covering for a while now and doing some research in this area.

We often talk about the wired aspect of Internet connectivity, but there's so much that can be done with wireless, and wireless requires spectrum. This is an area that some people fear to tread, because it often gets mired in some of the technical jargon. We're going to do our best to avoid that today but, be warned, you can't escape the technology, and, I suspect, if you're on this call, you have a little bit of knowledge in the field anyway. So, we will certainly have to deal with some of the technical issues.

One of the things I like to mention when we're talking about spectrum policy is the fundamental fact that it is a public resource, and that is the underlying quality. For a lot of the legal aspects of spectrum policy worldwide. It belongs to us, and that makes it a very different issue than a lot of other areas of our Internet ecosystem.

So, we're going to take a look today at some of the new developments in Canada. I'd like to point out that we're specifically dealing with one of the consultations going on with ISED in Canada right now. There are a couple, and it's worth taking a look at what's going on at ISED -- this often flies under the radar. CRTC often gets more coverage here in Canada, our national regulator. In Canada, the CRTC does not handle spectrum, unlike the FCC in the United States.

So, I would like to introduce the panel today, I'm gonna let them introduce themselves, and then we're going to jump right into some of the questions that we're going to be addressing on the panel. And then I really look forward to hearing from some people, I already recognize a few names that I see on the list here, so I know that we're in for a lively chat when this is done. Steve, can you get started please, just introducing yourself?

Steve Song
Sure. My name is Steve Song. I'm a policy advisor with Mozilla Corporation. I also work with the Association of Progressive Communications on policy and regulatory issues related to community networks in the global...

Dr. Gregory Taylor
Steve, are you coming to us via satellite again today?

Steve Song
I am indeed. I'm enjoying the pleasures of a Starlink satellite terminal, which is currently perched on my roof, for the second day in a row, and the results are what you see here. I'm joining you from Nova Scotia.

Dr. Gregory Taylor
Alright. Also part of spectrum policy, which we'll be getting to. Okay, Laura, could you introduce yourself, please?

Laura Tribe
Sure. My name is Laura tribe. I'm the executive director of Open Media. We're a nonprofit grassroots organization that does policy and advocacy work around trying to connect people who are most impacted by policy decisions with the actual people making them. So, hopefully we'll get into a little bit of that today. I'm joining you from Ottawa, the traditional unceded territory of the Algonquin nation, or election HQ, unfortunately for the past little while, so I think you'll actually probably factor a little bit into how to funnel into this consultation hopefully a little bit over the next little while.

Dr. Gregory Taylor
Great, thank you. And also we're really happy to have Darrah with us today. Darrah can you just introduce yourself?

Darrah Blackwater
Yeah, absolutely. [speaks Navaho]. My name is Darrah Blackwater. I am a citizen of the Navajo Nation, your neighbors down south in Arizona. I'm currently in New Mexico, and I work for the University of Arizona. I'm a law and policy fellow, I started working on spectrum policy and telecommunications policy in law school when I did an internship in Washington DC under the Assistant Secretary of Indian Affairs, and so I've just been studying and writing and publishing on this subject for a couple of years now. So, I'm here to share a bit of knowledge, but also to learn a lot as well.

Dr. Gregory Taylor
Good stuff. Okay, so we've got a great range of people, and I know, just looking at the names that I'm seeing here, we've got a lot of great people also who are out there listening and hopefully participating. For the first hour, we're going to try to have this discussion, and we're going to be opening it up. The chat lines are open, but for the first part, we're going to try and hear from some of the panelists while we get this started, though, I'm sure that there are a lot of opinions out there, and I look forward to hearing them later on.

So, we're going to start with a fairly general question, and that is, looking at this issue of spectrum, first off, what is it? And why is this important for communities? We talked a lot about the wired

element of the Internet, why is spectrum important for communities perhaps in ways that differfrom wired broadband? Steve, let me start with you.

Steve Song
Okay, well, wireless technologies are important, because they're really unparalleled in terms of their reach and affordability, so whereas wired network, fiber networks, take significant amount of upfront investment. wireless technologies are comparatively cheap to deploy, but there are limitations to how they can be deployed. What we are discussing today is the regulation and how spectrum is managed.

Why does it need to be managed? Well, there's one word to answer that question, and that's interference. My use of the spectrum might interfere with your use of the spectrum. So, there needs to be a plan to facilitate that interference, to make sure that we don't bump into each other. There are essentially two ways of doing that. The probably best known way is through a licensed approach. Typically, since about the, I don't know, 1990s or so, a private property approach to spectrum has been employed by many regulators, in which the right to use a chunk of spectrum is auctioned, and the purpose of that auction is on the presumption that those who are willing to pay for the spectrum, will value it enough to use it. So, the intent of the auction is to ensure that the people most likely to use it, are the ones who are most willing to pay for it. In some countries, this plays out a little differently in that the spectrum options also turn out to be of great value to as revenue to the Exchequer, especially in poor countries, but that is not the case in Canada.

Anyway, as spectrum becomes more and more in demand, the price paid for these options has gone up and up and up. So, earlier this year, for the 5G frequency 3.5 Ghz went up for auction, and over $8 billion was raised in this auction. To indicate just how valuable the airwaves are, particularly in these frequencies, that's a pretty good indicator.

Meanwhile, there is a completely different way of managing spectrum that is also a huge success story, and that is unlicensed spectrum, typically what we know as Wi-Fi or Bluetooth, and to use these frequencies, these airwaves, you don't require a license. All you have to do is follow a set of rules. So, it's a kind of rule based management as opposed to a kind of administrative based management that you get from auctions, and the rules say, you have to keep the power down quite low, and you also have to speak politely, and that you have to listen to see if anybody else is using the airwaves, and wait until somebody is finished talking. Those simple rules have proven to be hugely successful to the extent now that Wi-Fi itself is about a $2 trillion a year industry, and we see Wi-Fi everywhere, it's in our homes, our refrigerators, our weigh scales, hotels, bars, you name it. It's a massive success story, but it has these tremendous limitations, which is the power output.

So, if you wanted to provide wireless access to a community, and you wanted to do it with Wi-Fi, which is how many community networks operate, you need a lot of Wi-Fi access points. You need to put up a bunch of them around, and that takes effort and maintenance and you've an increasing larger number of points of failure. Whereas, if you wanted to use licensed spectrum, the $8 billion option, you could put up one tower and cover an entire community. That presents a much lower lift in terms of being able to provide coverage, but there is this massive barrier of the cost of that spectrum and, even while the technology for delivering LTE and 5G is dropping dramatically -- you can put up an LTE base station for over $10k now -- it is the price of that spectrum that is holding things back.

The reality is then that for those operators that have paid billions of dollars for the privilege of using that spectrum, where are they going to build infrastructure? Well, they're going to build it where they generate the biggest return on their investments, and that's going to be in comparatively wealthy urban areas. And so, the reality with licensed spectrum, and most licensed spectrum, is that it's dramatically underutilized in rural areas.

That's kind of where we are today, is that we have this massive problem that -- you know, we talk about the spectrum as a scarce resource, it's not scarce in rural areas, there is plenty of spectrum in rural areas, and that's what this ISED consultation is meant to address.

I think I'll stop there, and we can get into the details of the consultation in a few minutes.

Dr. Gregory Taylor
Okay, thanks a lot. Steve. Darrah, I'd be really interested in your take on that. Do you see things differently?

Darrah Blackwater
I mean, yes, and no, not necessarily. I think that's a really good summary of exactly what's happening and what creates the digital divide in rural areas, especially. And so, a lot of tribes that I've worked with on their connectivity and setting up their networks are in rural areas, and that's where America in general is largely under connected. I'm sure Canada's the same. So, you have this rural issue of, it's hard to connect those areas, it's more expensive, ISPs are not as motivated to connect those areas. But, at the same time, then you add in the tribal aspect of it, where it's harder to get contracts through -- there's more red tape, because you have to work with the tribe, and the BIA, and all sorts of National Historic Preservation rules -- that it just can be even more

difficult to even lay fiber, build that infrastructure, create these contracts, and these relationships that will actually get things built.

So I think, yeah, Steve, you did a great job of laying that foundation for us, and what I'll add here, is kind of flesh out my work, which is this idea of spectrum sovereignty. We had really good discussion about this on our prep call yesterday, where we're trying to figure out how this idea fits into this conversation even, and into governmental consultations at all. Because spectrum sovereignty, let me just kind of lay it out for you first, the idea here is that spectrum is a natural resource, it's not something that the Internet Service Providers are creating. It's not something that the FCC, or the ISED, or CRTC is making, it's just something that naturally occurs on the land.

Spectrum, for anyone who doesn't know, is short for electromagnetic spectrum, and it's just naturally occurring waves that we have figured out how to use for telecommunication communications purposes. But, it's not just telecom that we can use spectrum for, spectrum is anything from sunlight to these waves that we can use for Telecom. So, my argument, as an indigenous woman, and someone who went through law school and has studied these things, is that spectrum is a natural resource that is encompassed in our treaty rights, just like water, just like oil, gas, minerals, and the land. This is something that, especially today, especially in the midst of a pandemic, this is something that we need to live. And so, we really need this connection, for our economies, for our education, for our health care right now, in this moment, and not -- I mean, this is not not the beginning of it. I think a big argument against mine is, well, it's not in the treaties, it's not explicit.

But in New Zealand, the Maori, they have put it under, they call it ‘things treasured’, and that's everything from their children, to their water, to their spectrum. Anything that is valuable to that indigenous community is encompassed in that treaty. In ours, we say, sort of, I think it compares to like the Winters Doctrine, which has to do with water, which is that when the government made reservations for us, it meant that we were supposed to have everything that we needed to live on these reservations, in order to live as long as the waters run and the grass grows. That includes spectrum, that includes water, that includes sunlight, this would be -- in my mind, it's the same as the government putting up solar panels over all tribal lands, and taking all of that sunlight, and then selling it, and keeping the money, right? And so, you kind of get disenfranchised twice, because not only are you not getting the sunlight, you're also not getting the profits that a different government is making from your energy source, and the same goes with spectrum. Like I said, sunlight is on the spectrum, it's the same sort of waves that we're talking about.

That's sort of spectrum sovereignty in a nutshell, we can talk more later. I'm happy to drop my most recent article in the chat as well, where you can learn more about this argument, and just kind of how we're thinking about this. I don't mean to blow up this entire consultation. I mean, yes, of course. It's great that we're working toward these consultations. It's great when governments listen to us. And, there's a much bigger picture here that I think needs to be addressed and discussed, as we have these conversations about consultation, and what this management should look like in the future. Thank you so much.

Dr. Gregory Taylor
Thanks, Darrah, that sunlight analogy is a gem. That really puts it, I think, nicely into perspective, so I think that can capture what we're talking about. I can just follow up with a quick question. At the FCC right now, are you getting traction on this in the US? Or how? I know that might be too big, but I can't help but go there right now. Does the FCC see things the way you do?

Darrah Blackwater
I've asked a few FCC officials how they see this, and I think that their take on it is, well, it wasn't mentioned in treaties, like, as if in 1884 we were going to say "And we want all of the spectrum for our telecommunications towers that we will ever need in the future". Because that sentence is not in the treaties, they don't see that it's included. My argument is that it's for use and occupation, like I said, which is the same way we've gotten other resources. In my mind, what I am to the FCC is kind of a fly buzzing around that just keeps landing on their face, that's just like really bothering them. But also, I hope that we can have more conversation about it, and really understand. Because a big problem in the US government, especially, I would say in agencies that have to work with tribal nations, is that they just have never taken federal Indian law, they maybe have never visited a reservation, maybe they just learned that indigenous peoples still exist. Because, when I was in DC, that's something people would say to me was, I thought we killed you all. And so, there's really this, like, deep ignorance of not understanding what a government to government relationship even means. And so, a lot of my work is really just educating people and filling them in.

Dr. Gregory Taylor
Okay, well thanks. There's so much that we can go on there. It's funny that you say that, by these things that were established in 1880. Well, Marconi sends the first transatlantic signal in 1901, and we're still talking about the same stuff. I always bring this up in my classes, that yes, it all sounds so high tech right now, but we've been doing this for 100 years or more, and this has been a valuable resource for a long time. So, it's not so far fetched.

Darrah Blackwater
I'll just add to that, indigenous peoples, you know, we have Tsohanoai -- is our God of Sun in Diné, and we have stories about the blessings that Tsohanoai has brought us, and so we've known what spectrum is, we've named the people who manage spectrum in our worldview, for 1000s of years, and so it's not a new concept to us whatsoever, either.

Dr. Gregory Taylor
Great.

Laura, you do such much work at the policy level in Ottawa, a lot of your work I know is on the wired side? What do you see as the main differences when we're talking about spectrum, as opposed to the wired side of Internet connectivity? I mean, it's all part of the same process, isn't it?

Laura Tribe
Yeah, that's a good question. I think, from a public engagement perspective, there's a lot less opportunity for public engagement on the wireless side. So much of the narrative in Canada around spectrum is completely dictated by the big telecom companies, that it's all around what is the spectrum auction, and who got what, without a really open public discourse. Our spectrum is managed by ISED, in the same way that you see even in CRTC processes, which are, in many ways, equally or more complex in the conversation, but there is actually a process in place for people to participate. I think as a result, that's where you see a lot more comprehension and understanding.

By virtue of, not unilaterally but primarily, three to four companies having their fingers on spectrum in Canada, that really shaping the way we think about it, they're not really looking to invite other people into the conversation, they wish they could kick each other out of the conversation in many cases. They're definitely not looking to say, you know, what does Open Media look like? Because, Darrah, if you think you're a fly at the FCC, like well, try and figure out, everyone can brainstorm what Open Media is to the CRTC here, but it's some sort of pesky mosquito / black fly combination, or something.

The narrative is very closed, the process is closed, the spectrum options are closed, it's all very much behind closed doors, there's not a lot of transparency into what's happening, even when things like auctions are going on. That's really the only time publicly you see media coverage of it, you see anyone talking about it, is, there's going to be $8 billion that are flowing into the government because of the latest spectrum auction. Which is very different from the ongoing conversations that we have, which are a bit more base level around like, Hey, I live in a rural area, or a remote community, and I have absolute crap connectivity. It's not about well, I don't have

access to this amount of spectrum, it's like the end product doesn't exist for me, or the services don't exist for me.

It always, I think, to your point in the beginning, Greg, it's very technical. I think that's also the way people want you to think about it. That's how they try and make you think about it, so that it is very alienating for people to try and enter the conversation, because they don't want us in it. You know, what it feels like, well, hang on, hang on, this is our thing, like, we're the experts, we have this, like, maybe go back to trying to fight about, I don't know, prices for Internet connections, or whatever else. Despite the fact that you talked about it being a public resource, the conversations around it are really actually quite closed, they're not public at all and, when they do get opened up to the public, as I think anyone who's looked at the actual consultations can see, they're not framed in a way that's actually asking the public to participate. They're not asking you, you know, here, member of the public who is impacted by this decision, here are some things for you to consider that will help us make better policy. It's, hey, people who have been following this super closely, we technically need to ask you what you think.

So, here is it framed in a way that only those of you that already know the answers can participate, and I think that's really where, on the wireline side, there's an immense amount of technical policy, there's no shortage of it there either, this isn't to imply it's just limited to wireless, but the systems are a bit more transparent. There's more of kind of network and ecosystem of groups that are participating in that to do it, and you have more providers, full stop, on the wireline side that also just help change the narrative to hear things from their perspective, where I think a lot of the wireless side prohibits those smaller providers from even existing, let alone talking about the challenges they run into, or providing a different perspective.

Dr. Gregory Taylor
Thanks, Laura. That's actually a perfect launch to get into a bit of this consultation. Your point is that it kind of inhibits the smaller players from taking part. For those outside of Canada, I just should point out that, as I said, ISED runs spectrum, or regulates spectrum in Canada, the CRTC does pretty much everything else in Canadian media that isn't spectrum. The CRTC has public hearings. You can go, you can actually participate in the hearing. ISED does online consultations which, as Laura was saying, by the very nature, seems to exclude people. We're going to try today to open up the channels a bit more, especially in these consultations that are coming up.

I guess my next question, then we'll get to -- what are we facing right now? What do you see in these consultations, and I'm using plural, because there are a few consultations that are opened up at ISED right now, but we're really looking at a change, in particular, into rural licensing that's

coming up, and looking at some of the changes that are fairly fundamental, and could have real implications. But again, most people miss this.

So Steve, can I go back to you to start, just what do you see as important in some of the -- I'll use opportunity, for lack of a better word -- the opportunities we have right now in this consultation?

Steve Song
Thanks, Greg. Before I do that, I just want to amplify what Darrah said, I think the fight for spectrum sovereignty for indigenous peoples has been going on for a long time. Antony Royal in New Zealand has been fighting this battle for the better part of 15 years, and has won -- not as much as they as they deserve, but they have achieved a chunk of 3.5, which is very desirable spectrum right now, which has been set aside for the Maori in New Zealand, which is a massive victory. It's also a really timely one, because it's only in the last couple of years, that the price of access technologies, LTE and 5G access technologies, has come down so dramatically, and now there are 40 or 50 different manufacturers producing low cost equipment in this space. So, the time is definitely now in terms of ramping up that advocacy for spectrum sovereignty.

The other thing that's happening now, which is directly related to this consultation, is that, everywhere, regulators are realizing, oh, we have a rural problem, and that all of these exclusive licenses are actually largely leaving fallow spectrum in rural areas. And so, there have been attempts to [inaudible] around the world in the last few years. In Mexico, Rhizomatica, a nonprofit there, along with REDES, have successfully lobbied the regulator to set aside some spectrum specifically for indigenous communities, specifically for access in underserved areas. So, that's one way of doing it.

In New Zealand, the regulator. alongside of the spectrum that has been set aside for the Maori. have also created something called a Managed Spectrum Park, where they've set aside a chunk of spectrum that's just for small operators, and those small operators can access that spectrum on a sort of granular basis. In the US last year, there was a huge auction as well, of something called the CBRS band, which is also in 3.5Ghz. I'm sorry if I'm going too fast with the acronyms, but the CBRS is a called the Citizens Broadband Radio Service, and it represents a real milestone in innovation in spectrum management, in that it creates a tiered access approach, in that there is a primary exclusive spectrum holder, which is the military, and then they auction some of it, and then they kept a piece of it for general access, and so, you access the software system that determines what spectrum you can have. It's quite complex, and it's quite unique to the US, which is why perhaps nobody else has taken that route yet.

But, in the UK, the UK have done something quite innovative, and it's on the UK model that I think the Canadian consultation is based, and that they've created two new spectrum licenses. The first spectrum license says, where spectrum has been licensed but it's not being used, we will issue licenses if we think it's appropriate, and then they've issued another kind of license that says, well, there are parts of the spectrum band we haven't assigned to anyone, and we're going to create some kind of micro licenses using that spectrum. So, those are the two different kinds, one is licensed but unused, and the other is spectrum that hasn't been licensed to anyone yet, but it's not Wi-Fi or any of those, but one of the sort of LTE bands, or 5G bands. So, those are the two big categories.

We see that, in this Canadian consultation, most of it is about this kind of licensed but unused category, but there's a second piece looking at spectrum that has not been assigned yet. And so, this is super interesting, because it means that, where you have an operator that's paid for spectrum, but they haven't chosen to build out, whether because there's been no build out obligation, or it's an economic, then ISED can say, well, we are going to give it to this community, and we will allow them to build around infrastructure.

Steve Song
Because of the technological changes and the manufacturing ecosystem, it's totally possible now for community networks to build and manage their own LTE, even 5G networks, which is super, super exciting. But the devil's in the details, and I think that's part of what this consultation needs input from civil society on, because if you set the barrier to actually applying, and getting, and paying for that spectrum too high, then community networks won't get a look in. In many places, and especially the UK, I think they haven't oriented it towards community networks, or cooperatives, or anything like that, it's all about private LTE networks. So, if someone's got an industrial estate, or a large corporate park, and they want topffer broadband to their employees, well, that's where they sort of oriented this -- this asked for.

Steve Song
And so, I think, in terms of responding to this submission, those are the details we want to focus on, and I think, for instance, for indigenous communities, there's an easy ask there, to say there should be no fees here. I'll stop there.

Dr. Gregory Taylor
I'm surprised that indigenous communities aren't dealt with more explicitly in these consultations, it seems to me that this is a real opportunity missed at ISED. We talk a mean game about expanding broadband accessibility into all kinds of places. We're talking a lot about treaty rights

and indigenous rights in Canada right now. Here, it was a golden opportunity, it seems to me, and we haven't really seen that very much as far as concrete measures on the ground.

Dr. Gregory Taylor
Darrah, we talked about what's happening in Canada yesterday, did this sound familiar to you? Or, is this something that you've gone through, or you haven't dealt with it yet? Does it seem like something that echoes what's happening in the in the US right now?

Darrah Blackwater
Yeah, I would say that there's a lot of similarities. As far as the golden opportunity goes, a good -- I wouldn't call it a golden -- a good opportunity for tribes to get a hold of some spectrum came a couple years ago, I think it was in 2019, where they did a 2.5Ghz spectrum tribal rural priority window. The word rural in there is very problematic, because they added it in, in order to bar urban tribes from getting a hold of any of the spectrum, so tribes that were deemed in a urban area, were not eligible to get spectrum, even if their reservation was in that area, but tribes in rural areas were allowed to do it. So, that was kind of the first problem.

Darrah Blackwater
Essentially, this window was an opportunity for native nations, federally recognized tribes, to get a hold of some 2.5Ghz spectrum that they could build out their networks on. It is such a great opportunity, because I've seen what tribes can do with a 2.5Ghz license. Two years ago, we were in Hawaii, and we were with the Internet Society, and we supported them in building out their sovereign community network after they got their hands on some 2.5Ghz spectrum. It's something that people can do.

Darrah Blackwater
I think maybe the reason that this opportunity hasn't been considered before is, honestly just that there's this, like I said, that lack of education and ignorance that, if they know indigenous people still exist, they think we're still running around the wood with sticks still. I was in a meeting in Washington DC a couple of years ago, and I told somebody -- someone was just making conversation, and they said, Well, what do you do? And I explained what I did with Internet and Indians' rights, and he said, Well, what are Indians going to do with the Internet? And so, there's really still these deep ideas of like native people are not modern, native people don't know how to set up a network, and it's just this ignorance, that we don't need the tools because what would we do if we had them?

Darrah Blackwater

Like I said, a lot of my work is education, and just shifting these mindsets, of like, No, look at these amazing stories, look at what we are able to do. Steve has seen it, too. If you are lucky enough to see it, it is such a beautiful thing, these people in these tribal communities who are engineers, they don't have the fancy degrees from Stanford, they don't have any papers having on their walls, but they understand these things, and maybe they've gone to tech school, maybe they've just learned it by someone who's brilliant who taught them in their community, and so there are all these really brilliant people. I say all the time, it's not that indigenous people need the Internet, it's that the Internet needs indigenous people, they need our ideas and our brilliance and our input into these technologies, into what we can do for the world and what our traditional knowledge holds, if we are willing to share it.

Darrah Blackwater
That opportunity, the 2.5Ghz window, was a great opportunity for a lot of tribes to get networks off the ground, and to get hold of some 2.5Ghz spectrum, which is great in rural areas, it can go through foliage, it can cover some distance, and so it's a good band. But again, I just kind of see that as like the government taking away a cookie, and offering to give back a crumb if our application is deemed appropriate. It's a start, and that's why I'm not totally into calling it golden, but it's a really, really good start, and that we will take. A lot of tribes, hundreds of tribes, were able to get spectrum through that priority window.

Darrah Blackwater
So, I hope to see more of that in Canada and more of these ideas changing, and I think maybe that will just be -- like what I'm focusing on right now in my work is storytelling, and just trying to show what we can do with spectrum, and why it's so important for us to hold that resource. I hope that answers your question.

Dr. Gregory Taylor
You brought up some amazing points there, and one of the first ones that jumped out at me, that I hadn't thought as much about, was the high number, a percentage of Canada's indigenous population, who live in the cities. And I think you're right, too often we think of the indigenous population is a rural population. That's increasingly not true. And so, that is one that is a tough part of this puzzle that we're going to have to figure out. I know that, for example, Canada -- it's still there, but it's really on life support right now -- had a rural remote broadband system plan that was part of this consultation, what's the future of it? And part of the problem with that was defining what is rural and remote in this country, so you have to come up with clear definitions of what we mean by these things, and it doesn't always lend itself that readily to these things.

Dr. Gregory Taylor
Laura, you're so involved in being a -- we've used the analogy with a pesky insect at the regulator. I'm wondering though -- you deal with wired and wireless -- does the indigenous issue come up in Ottawa? Do you hear it much?

Laura Tribe
Great question. Actually, I was going to build on something you said, and Darrah said, that's the perfect lead-in. I think you asked, you know, you're surprised that indigenous communities are not included, and then I think Darrah gave five examples so casually of the bullshit racist views of indigenous communities that you have to deal with, that are framed and supported by the people that are making these consultations, and these decisions in the first place. And so, kudos to you for all the work you're doing, with the immense amount of patience to do that kind of educational work. But I think that that really underpins it all, is that there's not this awareness of what indigenous communities need. I think, in the Canadian context, wireless, wireline, across the board, indigenous communities aren't being mentioned. There's a huge gap in what that looks like.

Laura Tribe
There's other people I know on this call who've experienced it in far more depth or detail than I have or can speak to, but I think the consultation, that was launched last December, that mentioned indigenous communities was -- we started looking at it, we're like, what launched this? Where did it come from? And it was, a month before we had put in a submission on behalf of, and supporting the First Nations Technology Council, just a single page saying, What are you doing, you're not talking about indigenous communities?

Laura Tribe
They launched this rushed, hurried consultation on rural and remote rollout for indigenous communities that, when we started looking at it, was the first time in the last five years they'd use the word indigenous on the CRTC website, in any consultation launch. When you look at that -- not that the CRTC website is easy to search, and I'm sure someone can poke a hole in that theory somehow, if you can really figure out how to navigate all of their submissions -- but it's not the center of the framing, and I think there is a lack of guidance from the top that dictates this is actually to be a priority.

Laura Tribe
I think for any individual department or agency to decide they're going to proactively do this is really risky because -- from their perspective, not from mine. Sorry, just be very clear -- they see it,

as kind of worried about what door they're kicking open, that actually might be problematic to other departments, or other policies, because they're not looking at it holistically, they're not looking at it in terms of how do we actually make sure that indigenous communities in Canada have what they need, but instead, their lens is entirely through their specific policy, the landscape that they know, the main stakeholders are already working with, which primarily are companies. It's a very capitalist, corporate colonialist system that built these networks in the first place.

Laura Tribe
So, when you start to say, wait a minute, how do we actually change the entire frame and how we look at it? That's really scary, and it's scary for, in particular, I would say, bureaucracies that are built on perpetuating what they already know. And so, when we look on the wireline side, it goes back -- like at the Indigenous Connectivity Summit, when we were up in Inuvik, hearing about the Broadcast Telecom Legislative Review, and trying to pitch indigenous communities to participate on a one month timeline, when it had been open for months, but no one had actually told indigenous communitiesit existed, let alone asked them to participate, or told them how they could participate, or why it would matter.

Laura Tribe
Time after time after time, at best, they're an afterthought. I think that's, like, it's incredibly frustrating., I can only imagine what it's like for actual indigenous communities trying to have their voices heard, to not know that there was potentially the chance to have participated. And even when they are, they're not given the same power or value or credit or credibility as well resourced companies, who define themselves as the experts because they hold all the information, they refuse to share it. There's incredible power dynamics at play there.

Laura Tribe
And so, I think on the original point around like, you know, wireless versus wireline, when you look at wireless being such a closed process, if you can't get a seat at the table, when the door is technically open, and you're able to join, how are you going to be a part of that conversation when the doors are never open to you in the first place, and it's invite only? It's really frustrating to watch. That's where from -- and I will probably get into this a little bit -- from Open Media's perspective, there's kind of two parts to a consultation, what are they asking, and what do they need to hear. They're definitely not asking what they need to hear, and how do you make sure that you kind of fit in the second part, despite whatever they might put in the first part.

Laura Tribe
I see Steve put his hand up, they probably sparked something..

Dr. Gregory Taylor
I see that Steve was trying to jump in there.

Laura Tribe
Sorry., Steve.

Dr. Gregory Taylor
No apology needed.

Steve Song
I think there is, there is an opportunity right now in this consultation for a really important reason. That in order to introduce these two new kinds of licenses that ISED want to introduce -- or maybe it's one meta-license with two flavors, I'm not sure -- they have to do one really, really fundamental thing, that the incumbents are probably not going to like very much, in that they have to change the nature of existing exclusive spectrum licenses. This is a profound and fundamental thing, because spectrum licenses, especially the ones that go at auction, as a general rule, offer exclusivity throughout the entire country, you own the spectrum from coast to coast, that's the general understanding of how spectrum licenses work.

Steve Song
What's changed with the Ofcom licenses, what's changed in Mexico, what's changed with the CBRS licenses in the US, is that's no longer true, in that there is no guarantee of exclusivity. There is a guarantee of a right to protection from interference. That one little change changes everything potentially, that creates an opportunity for the regulator to say, Well, we think what's best for the country is going to be is -- you can use the spectrum where you're planning to use it, but where you're not planning to use it, we reserve the right to do other things. That could play right into a conversation about spectrum sovereignty, and it really does open the door to all kinds of possibilities, but it is one that the incumbents are not going to be happy about, because they're going to say, Well, I paid $8 billion for this spectrum, now you're telling me I don't have all of it? That argument is the one that we're going to have to tackle by the horns, as it were, in this consultation.

Dr. Gregory Taylor
Yeah, there's a couple of key points brought up that are really pertinent to this consultation. One, Steve mentioned about the licenses in the geographical area that they cover, a lot of the licenses now are Tier 4 and Tier 5. I know we don't want to go into too much jargon, but basically what that

means is they're getting smaller, and when it was, for example, just a few years ago, there was an auction, where the license was for the entire province of Alberta here, that excluded small players right off the bat, they could not get involved in that. Now we're getting smaller areas, that might encourage the participation of smaller wireless operators.

The other thing to watch is the length of the licenses, the duration of the licenses. This is something that often gets tucked in at the end of the consultation in the policy, they're usually for 20 years. 20 years is forever in digital time, I've been arguing against this for 10 years, I've sent several things to ISED saying, Why are we doing these for 20 years? 10 maybe? But they keep doing for 20 years. Those that get the licenses feel that they have a real sense of private property, and that they are locked in there for 20 years. The minister in Canada can intervene, can change the structure of the licenses, and is doing so on another consultation that's happening right now of spectrum that's been sitting idle for about 20 years.

So, we've got to make sure the spectrum is being used properly. I think that Steve's right, that what we're looking at right now could be a substantial upheaval in how we have licensed this public property for the last 20/25 years.

Sorry, I am just going to have to take a look at the other areas I want - oh yeah, as far as actually getting into a consultation. I think that that's a key point of this talk today is, to encourage participation. First off, it's intimidating. Bell and Rogers will come in with teams of lawyers, and others will come in as individuals. It's my experience that, even though you don't necessarily bend the entire discussion of the consultation, you do get read, at least in my experience, you'll they'll give you a little citation somewhere, you can have a voice.

Laura, can I just go to you because, again, you've done a lot of work in this area. What would you say to people who are just trying to -- they're not sure if they should participate in this consultation? What would you say to someone who's just kind of on the fence that way?

Laura Tribe
Do it.

Is that too short of an answer? I mean, looking at it, there's all kinds of consultations. We're talking about the CRTC, and ISED, and all the different platforms, and they all have their merits, they all have their difficulties and weaknesses. When you look at this type of consultation, coming from ISED, coming from a government department, it's really a signal that they're planning on doing something, and they want to know how to do it, and they want to know what will make them look

good, and how to do it right. So, as much as this is an incredibly bureaucratic tedious technical proceeding, ultimately it's overseen by an elected official who has a very strong political agenda with a mandate and polling data. Those are all the factors that go into the final outcomes of this.

And so, in consultations like this, to my point that they're not always asking the questions they need to be asking, it doesn't mean they don't need to hear what they need to hear. When they open the door, it's really important not to miss the opportunities to kind of kick it open a little bit further, and maybe force them to think about things a little differently than they came into it. Because these consultations come quite clearly with an agenda in mind, they're thinking of doing something, they're kind of pitching what they're thinking of doing, they're waiting to hear.

There's a few things that happen after the fact. You will get your citations, Greg -- you probably get more than you're giving yourself credit for. But, at the end of that process, they have to read every single thing that goes in, they're obligated to, and whether it makes into their final recommendations or not, it's forced for someone to have to process that.

But there's other pieces of that consultation, beyond just the final recommendations or legislation that come out, they have to compile it all and report what they heard from everyone. That forms not just the basis of what they do, but also the way they think about how they frame their response. Because if they get a ton of responses, and I think this is really where Open Media maybe skews on the volume side, more than people on this call might, but they can't ignore the fact that people overwhelmingly told them something. And so, even if they're choosing not to do it, they have to justify why they're not doing it, or they have to give an answer or a reason. Or, if they completely ignore it, they get called out, because now you have something on the record that says you were told this and you didn't acknowledge it, why did you move forward without it?

It can be intimidating on something that's technical, it can also be frustrating when you're not sure if your voice is going to count, but it's the only way to start moving the dial on some of them. And so, I think, tell them what you think they need to hear, and on proceedings and consultations, and we we hit this all the time, they feel like you need to be a decades of experience telecom lawyer who's gone through every policy proceeding in the past 20 years, to know exactly how to reference and footnote every single thing to make your case. I'm sure that's great, and if you know one, get them to help you out.

But, ultimately, if the system's not working for you, that's what they need to hear, because, if they hear overwhelmingly the status quo is broken, it helps them justify needing to do something to try and change it. Even if you don't know exactly what the solution is, they need to know that they

have to start looking for one, and maybe the course they're on isn't going to get there. It's a long process. No single consultation has ever, with maybe one or two exceptions I can think of,totally killed a bad idea, or completely fixed a system to nail the policy prescription, but I think that, if you don't say anything, the absence of information is equally weaponized in these consultation proceedings.

You know who's going to show up, you know what they are going to hear. One of the biggest difficulties you face are, we just had an election, it's a Liberal government again, in a minority, we know exactly what their priorities are, it's exactly what they looked like in June, there's nothing new here. What we've really seen, from this government in particular, is, from a public interest perspective, death by consultation. They'll ask you, to make sure that you have to submit, and if you don't, and I think this is the real risk, if you don't, they say we asked and no one cared. We gave you a chance and no one participated, and it gives them what they think is a full cover, and remit to do whatever they wanted, because no one participated.

LIt's a ton of pressure, and it's exhausting. I'll spare you all of my other rants about why the system is not set up to encourage public participation, but I think when they do invite people in, it's really important to make sure that people show up, or else they either stop asking, or they assume no one cares. That's where, I think, the more we can actually make sure people are saying stuff, the better.

Dr. Gregory Taylor
Thanks, Laura. I think that's great.Something I'd like to add to this is that, when you look at the consultations online, one of the things that's so intimidating, if it's your first time going through it, is they'll usually have 15 to 20 questions that they want to have answered. You don't have to do them all, and don't worry about it, if there's 10 of them that you don't even quite get where they're coming from on that. Answer the ones that really hit home for you. As Laura was just saying, they know that Rogers and Bell and the others are going to be there. I do think it actually jumps out at them when they get something that's outside the bubble, that can have impact. They know what they're going to hear from the others.

Okay, anyone else, Steve or Darrah, on the consultation process itself, and how maybe your experiences, or Darrah, perhaps which you've had in the US? Sorry if we're getting into a little too inside Canada baseball here, but if there's something about the US process?

Darrah Blackwater
No, don't apologize for the Canada baseball. I know what I signed up for.

I don't have a ton of experience with consultation. I haven't worked for a tribe yet. I've listened into consultations that have happened, I've listened to some great ones, and I've listened to some really poorly done ones. The struggle with the 2.5Ghz process, when they opened the priority window, was really that -- I don't know if it was just a lack of awareness, or if it was strategic in order to discourage participation by tribes, but they first announced it without much time before they actually opened the window. They really didn't get the word out very much. Just like Laura was saying, they weren't really able to reach far and wide, especially when you're talking about underconnected communities, and then you're advertising it online. That was a really rough part of it. Like I said, they weren't inclusive of all of our nations, the urban ones were left out. Laura did a great job of just kind of pinpointing all of the issues that we see as well, where they're not being inclusive, they're not getting that word out, and then they left such a short window for people to actually apply.

When we're talking about tribal nations, we're talking about governments that actually need time to process resolutions, and get their people on it. Everything from, what is this about, all the way to, are we going to do this? How do we do this? Who's going to be on it? And actually getting the paperwork in, especially when you don't have Internet and you're struggling. So many tribal nations don't even have their HQ connected, their tribal headquarters, because they're maybe they're focusing on education and just trying to get hotspots out to the kids.

So, there are so many factors that have to go into that consultation, and into reaching out to governments in order to let them know what opportunities are even available. I would say that's the place to start as far as how consultations can be better. Like I said, Laura, just hit it all, and we're seeing all of that same stuff on this side of the border, too. So, yep.

Dr. Gregory Taylor
All right. Before we open the doors to questions from everyone, one of the last things I want to get to is, for those who haven't done this before, and that's most people have not participated in a consultation, is their assistance available? How should one go about just the actual doing of this, not just in theory, but how does one go about writing this? What should you think, what should you include? Can you get help doing it? Laura, can I start with you?

Laura Tribe
Sure. It's tricky. I mean, I think you start by writing down why you care. Like, you really need to know what it is that you want out of it, it sounds super basic. But like, if you don't know what you want to say, it gets really hard. So I think starting with why you care what it is that you hope will happen. I'm hopeful. And I'm kind of iron mark on the screen here that we can maybe find a way to connect people who are interested afterwards, to actually have a chance to connect with people who've done it before, because I think, you know, it is a small community of people who have done this, but also it's a pretty kind community and pretty generous, he's pretty happy to share the knowledge that you have with others, and figure out how they can support it, I would say the other thing to do is a lot of the previous consultation submissions are actually on the public record. It is easy to go back and look at other things people have submitted in the past as a model, in terms of what you like, what you hate, the good things, pick people that you like, what they've said in the past, and you can often find their submissions to see some of the basic things.

I think ISED is a little different -the CRTC has its like weird formatting rules and all kinds of things -- but just some of the basic requirements of what has to go in the document. Those things can be tricky and the processes of how to navigate it can be really rough. Looking at some of those in the past sounds really boring, archival, old school research, but a quick google search can connect you to, or actually give you some of those, and a lot of the organizations, experts, academics, anyone that you think has done good work in the past, often post their submissions on their own website for you to see, so that you don't have to try and dig through the government's less accessible versions of their sites maybe.

Mark Buell
And, Greg, if you don't mind, picking up on what Laura said.

Dr. Gregory Taylor
Please.

Mark Buell
What I'll do is send out a follow up email to everyone who's participating today, and include a way to opt into receiving messages, or some sort of email group where we can exchange information and support each other, if we're planning on writing a submission.

Dr. Gregory Taylor
All right, that'd be great to have some support for people. Okay, I think we should open things up here to the many great people we have who are in on this call. One question I want to deal with, I

saw in the chat room was, This is Sally, is there a group reviewing the Telecom Act? Don't get Laura started because she's been involved with some of the Act reviews that have been going on for the last couple of years here. There is bill C10 in Canada, which is more on the broadcasting side of things, so it does deal with online streaming, there's no doubt about it.

But, right now, they've kind of steered away from this. This actually, I think is an opportunity for us, is that the government right now -- it's in that moment now where it's malleable. They haven't even announced the minister yet in this area,, and they have not telegraphed exactly where they're going with changes to the Telecom Act. In Canada, you've got the Broadcasting Act and the Telecom Act, some say we should have one big act, I was one of those, but I think I've lost that argument, and most are saying we need to have one for the culture side, which is broadcasting, and another for the telecom. Anyway, so this is -- the Telecom Act has not been updated, but they say it's going to be sometime soon.

Alright. What I want to do now is open this, in as fair away as possible, to questions from the floor. So, the lines are open, and let's see here. Oh, Radio Communication Act, Brown was right. Yes, that is part of the spectrum regulations in Canada. Okay. Any other questions, comments, that people would like to engage with at this point?

Faud Khan
Hi there. I think my question's for Darrah. Darrah, thank you for your background.. I have a question for you. We do stuff with early learners, especially First Nations kids, and we're looking to get into the US, and we're looking at the Head Start program, I don't know if you've ever heard of that, but it's for kids pretty much from K to grade 3, grade 4, and teaches indigenous oral language skills. My question is more, because with the Biden administration, and the amount of money that they're putting into Head Start, for schools and kids, and especially because a lot of these kids aren't connected, can you use something like Head Start as the means to leverage getting the spectrum and getting the connectivity into these communities, sometimes remote, and then sometimes on the fringe of cities? Is there a potential to leverage something like that from your experience? Or, have you run across that at all? Thank you.

Darrah Blackwater
Sure. Thanks so much for that question. I'm going to kind of, there's a couple ideas popping up in my head. I'm just going to kind of flow with each of them. The first one I'm thinking of is, I was just out in my homelands, which is Monument Valley, which is like the super rural, beautiful area, if you've seen like the old John Wayne movies, that's where my family's from. My cousin opened a community center, and we were shooting a documentary out there that will come out in October,

with Vice media. When we were thinking through how can we connect this, because they're using hotspots and they're paying over $1,000 every month for hotspots, so that students can come there after school and do their homework there. A lot of homes out there don't even have electricity or water, and so students will come to the community center, and then they'll go home after they've done their homework. Businesses and all sorts of people use it as well. They have a little library there with all books from indigenous authors, children's books all the way up to novels and research books. I've been looking into and somebody might have to help me out with this, it's the schools and libraries through the FCC, but they have this program where that connects schools and libraries, E-Rate I think it's called specifically, and it subsidizes, and so it really is less about building the infrastructure, and more about subsidizing the Internet so that they don't have to pay as much in order to be connected. That's one approach that they've taken, through E-rate, and I think it helps.

But, right now what I'm doing is, I'm looking into who is eligible, could a Head Start program be eligible? Is that the kind of policy fix that would make that more accessible and help us connect more students. Looking at the subsidy programs that are already available, and then maybe just expanding the eligibility, or expanding the definition of who fits into that category. So, that's one possibility.

As far as spectrum goes, that same tribal priority window band of spectrum, that 2.5Ghz, that was actually for education before, so that was given to educational institutions who could apply, and there's actually a map. Mark, maybe you can find that tribal priority window map and drop it in the chat. So, there's this map that shows kind of like, who owns the spectrum in certain areas, and that band specifically was for, like I said, educational institutions. When you click on, you can see who owns each band of spectrum in a geographic area, and it's all educational institutions, like the University of Arizona, all the way down to like small charter schools in a local community. Those educational organizations were able to utilize that spectrum, and then that spectrum shifted to this tribal priority window, so it's kind of a mix now, I think.

As far as getting spectrum, that is an option. I know, PBS has certain bands like that as well, that they get either at reduced cost or for free, public broadcasting systems. So there are options, and it might just be a policy fix to expand, like I said, who is eligible for that, who's able to apply for that, or it could be making something new. If it's just something like where organizations and heads of organizations like you all across Canada have this need, then maybe you get together and say, Hey, we have this need, let's talk about how to fill this and create a new bigger program, which is obviously a much bigger project. I would say that figuring out how big the problem is, is

the first step, and then figure out which is the best approach, because there are options like that. I hope that answers your question.

Faud Khan
It does. We're going down to South Dakota in a few weeks., and we're meeting with a whole bunch of tribal elders and talking about our program for language and cultural revitalization through what we do, as a company. At the same time, one of the challenges that they always come back to, and this is in Canada too, because we're already in the Canada marketplace, I guess we'd never really thought about how broad spread it is the US, that a lot of these communities that they live in aren't served by Internet. Not that our program is fully based on Internet, we only need it to do the assessment, because we have to be, simply based on every child that comes into our program, after that you don't necessarily need the Internet.

But, with that, you have all kinds of challenges. With this program -- and what Mark and what the Internet Society are doing, I think has been awesome, you've been following this program for a few years - we're trying to find ways -- and because my background is also Telecom, I also have a love for making things work in these networks -- can we give them guidance to, here's stuff that you need to think about without necessarily building the infrastructure, but can we give them let's say, links, or people that we can connect them with like yourself, to help support them, while we try to support them as well, with the revitalization and things like that, that we're trying to do. I'm trying to find anything that can just get us working with some of these communities that are asking us for help, but we just can't seem to help them for certain reasons.

Head Start and the amount of money they're getting right now is phenomenal, that's definitely helping a lot of the communities, I find, get access to resources, even hire teachers where they couldn't hire teachers before, I think is huge. I am carrying on too long. Thank you.

Darrah Blackwater
Yeah, also, I'll put my email in the chat, and please follow up with me and we'll see what we can do as well.

Faud Khan
Okay, perfect. Thank you.

Dr. Gregory Taylor
That's great. Thanks for the question.

Eric. You are next. Would you mind saying where you're going where you're located as well. I just I'm interested to see where people are coming from today, and I've got Reza and Rob in the chat room with questions as well. So Eric, the floor is yours.

Eric Huerta
Well, I'm working for Mexico, I'm part of Rhizomatica, just to welcome at least for the panel, I know the intervention is very interesting for me, and I just found out the article Darrah has shared with us about the indigenous peoples sovereignty right to the spectrum. It's something we have been working a lot in Mexico, and I just wanted to share some point that, I think, it was very important and open a lot of windows in our legislation. So, in our Constitution, we have a right, that is now part of the Declaration of the Rights of Indigenous Peoples, that is that the government has to guarantee the conditions so that the indigenous people can own and operate their own media. That's the full question, and that's the Article 16 of the UN Declaration.

So, when it came the National Telecommunications Act, we ensure that. In one of the articles that talk about the spectrum planning, it established that when the spectrum planning is done, they shall consider what is written in the Article 2 of the constitution, that is the guarantee, the condition so that the indigenous peoples can operate their own media, so it means that in any spectrum planning, the spectrum for indigenous people media are considered. So, this opened a full window, because anytime that an indigenous communities can need the spectrum for whatever they need, they could ask, in the spectrum planning, to establish or reserve some spectrum for that need.

That so far has allowed us to access a spectrum in 2G, we are about to get spectrum in 4G, and also for microwave links. So, I think it's something that's good to to share, because it can help -- is to solve the problem at once. Otherwise, they will put you anytime you request in a consultation or something, so this establish a specific obligation for the state and government.

Darrah Blackwater
Eric, I want to make sure that I understand what you're saying. So, you're saying that the Mexican Constitution has taken in these ideas from UNDRIP, the United Nations Declaration on the Rights of Indigenous peoples. UNDRIP says that indigenous peoples must have the tools necessary to create their own media, and so you're saying the Mexican government has welcomed that, and said that indigenous peoples can ask for a window, or an opportunity, to claim some spectrum that they need to operate their own media.

Eric Huerta
That's correct. In the law, there is some specific that it's an obligation of the regulator to consider a spectrum for indigenous needs. So, anytime they need it, they can ask for for that.

I can share with you some of the publications that we've done regarding that.

Darrah Blackwater
Cool!

Yeah, please put it in the chat. Thank you so much for sharing that.

Dr. Gregory Taylor
All right. Thanks a lot. Reza, you had a question up there in the chat room. I could read it, but I'd rather hear it from you. Can you chime in?

Reza Rajabiun
Yes. Hello. Just a question. ISED is proposing using a first come first served approach to allocating spectrum via this new access licensing regime they want to develop. You see, do you see any risks in that? I guess this is a general question for everyone. I've just been thinking about it at a high level, I can see a few risks, but throwing it out there for discussion, because it's one of the practical questions that they're covering [inaudible]. That's sort of the key policy question they want an answer to.

Dr. Gregory Taylor
Does anyone want to jump in on that one. Steve?

Steve Song
Sure. First come first served was how spectrum used to be handed out. It was simply a question of administration, really. The spectrum was assigned on a first come first serve basis. It was only when demand began to exceed the availability of spectrum, that new mechanisms, ranging from beauty contests to auctions, began to be implemented. The assumption here by ISED is that demand will not exceed the availability of spectrum, and I think that's probably fairly accurate. Because a) we're talking about rural areas, b) we're talking about potentially a great deal of spectrum. This license potentially applies anywhere to any band. There is in the second part that's unique to the 900Mhz. frequency, but there is potentially a lot of spectrum that's up for grabs, in theory. So, I think they're right, and I think also, it's the sort of thing like you don't want to fix a problem before it's happened. They could introduce mechanisms if they wanted to, but

introducing anything that brings barriers to accessing the spectrum is going to be problematic because, as we've seen in the TV White Space, when you create administrative hurdles and processes that are too onerous to meet, then you're going to -- with a novel technology or novel approach, then uptake is going to be limited.

Reza Rajabiun
So, you don't think there is any potential for an exclusionary -- there is so much supply, it doesn't matter?

Steve Song
I think that would be an awesome problem to have.

Reza Rajabiun
Okay.

Dr. Gregory Taylor
Reza, I've got some hesitations about this, and it has to do with work that I've done on the previous rural remote broadband system, the RBS system that they appear to be facing out right now. They started those licenses with a first come first serve, and there was a gold rush. People came and grabbed all these licenses who never had any intention of deploying. So, I have a hesitation around first come first serve, I think there's got to be some sort of clarity that you are actually going to deploy service. How they're going to make that clear, I'm not sure. There has to be some pretty sound deployment conditions, we cannot let this become -- as I said, it happened in in Canada earlier, in a previous program, we have to be careful that we just don't let that happen again.

Steve Song
If I can just respond briefly there. I mean, I think caution is appropriate, but there are some significant differences between RBS and this. One is the licenses are much shorter, in the one case, they are one year licenses, and the other case they are three year licenses, so there'll be an opportunity to audit deployment and uptake and, in this case, there's a lot more spectrum. It would be very tricky to hoard this kind of spectrum, because it's secondary use to begin with, so that, if you weren't deploying it, then ISED could say, Ah, well, we're going to assign it again to somebody else. So it is a very different animal, this particular kind of secondary use of a primary source spectrum.

Dr. Gregory Taylor
Reza, what's your take on it?

Reza Rajabiun
No, that was just my question. I wanted to get other people's feedback, the trade off between exclusionary potential. For example, connecting it back to the indigenous community discussion that we've been having, if there is no coordination and first mover advantage, and somebody else might jump on it, and then they will be excluded later from using it.

Dr. Gregory Taylor
Uh huh.

Reza Rajabiun
Also the size of the license matters, because let's say you have a village and a mine nearby, if the mine goes for the first come first serve basis, and there is limitations on it, then you're not going to be able to get it for the village next door.

Laura Tribe
Can I? Just one thing to add?

Dr. Gregory Taylor
Please, Laura? Yes.

Laura Tribe
Yeah, I agree. I am far less of an expert on actual spectrum deployment than all of you speaking, so it really comes from approaching these things, which some of you can appreciate, is reallyow could this go wrong? How could it be misused or abused? When you look at first come first served, to Darrah's point previously around, you're dealing with actual governments that have to figure out if they want to move forward on this, or how they want to handle it. If you're looking at prioritizing indigenous communities, Sally just threw a comment in the chat, Can you actually do first right of refusal?

But then do we end up with a half-assed Bell network through all the Northern Provinces and Territories that they eventually abandon but, in the meantime, indigenous communities could have been building it up themselves from scratch in a way that actually they wanted, and they have ownership over. Speed is not always the factor in terms of who is the most equipped or

suited, I guess, to receive it. But again, you all know more about how much spectrum there actually is, and those kinds of pieces, than I do.

In some cases, there's a, do you want it built fast or who do you want to have control over it, question. Historically, it has been using the argument, that we have to have it built fast, that tends to continue to perpetuate the same people who already have the mechanisms in place to respond the fastest, to be the ones who can navigate the bureaucracy to get there first, or to figure it out, which I'm not saying necessarily applies in this case for spectrum, because, again, this is not my area of expertise. As I'm trying to think through it, for me, is the point to make sure that just anyone gets in there, and that does make it kind of this like really fast gold rush rapid response, and then, hopefully, there are accountability mechanisms to make sure it's actually built.

Dr. Gregory Taylor
Laura, I think you raise a really good point of how the whole rhetoric around first to something, and speed, can often be used as cover for what's often just claiming spectrum or something else that that is lurking below the surface, when they talk about the importance of getting this done first. The 'Race to 5G' is a case in point right now that we're seeing in the wireless world. A lot of people are arguing it's a race that does not have to be run.

Okay. I also noticed that Rob McMahon had a question on the chat room. Rob, can you jump in please?

Dr. Rob McMahon
Yeah, hi, actually, Eric already answered. It was about the case in Mexico. But I do have another question, if I can. I'm just wondering if any of the panelists have any advice for things like coalitions, with service providers partnering with communities in order to develop a shared project to access and deploy spectrum? Do you have any lessons or suggestions or questions that communities might want to ask, or be aware of, in these kinds of cases?

Dr. Gregory Taylor
Thanks. I think we've got people can maybe deal with that from a variety of geographical locations as well. Anyone on the panel want to jump in there?

Darrah Blackwater
Just briefly, I do have quite a bit of work with the Data Sovereignty group hosted by the University of Arizona, and that's really the first red flag that just goes up in my brain, is data sharing, and just making sure that you have those contracts really tight, in a way of what does consent mean in the

community for infrastructure going on to the land, what sorts of hoops are necessary to not clog up the process of making whatever projects go smoothly, but also making sure that it's done in a way that is in line with your traditional views, and your traditional processes, and then making sure that you you get consent at every step of the way, as far as that traditional knowledge, as well as the data of that community. Where is it being stored? Who has control over it? Do you have the power to bring it back at any point in time? There's so many things to consider, but the first thing that pops up in my brain is just making sure that that indigenous data stays with that community in whatever way those leaders think is right.

Steve Song
Speaking from a purely technical perspective, on this particular spectrum, because it's secondary use, and effectively a kind of private network, it's actually a lot easier technically to be away from an existing service provider, as opposed to trying to partner with them, because the actual handover from one network to another, with different SIM cards, actually is a technical problem you don't want, so you'd rather be in in a frequency that's not occupied by one of the incumbents, and connect via the Internet to to do your data services. Partnering with an operator? Well, there are many ways to do it. You can be a MVNO, which means you ride on the existing operator's network, and Eric is right in the midst of that now with Rhizomatica in terms of negotiating a MVNO relationship with the wholesale operator network in Mexico. Unfortunately, we don't have time to address it today, but that's a whole interesting webinar on its own.

But then you get varying other sort of ways of relating, for instance in Peru, you can host the radio masts and rent the infrastructure to the incumbent. There are many, many different ways of doing this. In this particular case, for this particular spectrum, it's better to be independent, just in order to manage your own infrastructure and, of course, to address the issues that Darrah has raised as well.

Dr. Gregory Taylor
The other point I always feel I have to point out, for those who haven't done a lot of work in this area, is that wireless, though, always goes into a wire at some point, and so you need to actually have an agreement with a wired service, as well, to get into the Internet, and if you're thinking of a future with 5G, that has to be fiber to actually get the results that you want. That's something that you have to think about as well, if you're planning how to deploy on this spectrum.

Any other questions? We have about 30 seconds left, if you've got a quick one?

All right. I'm not seeing any little hand emojis, and...

Darrah Blackwater
I have one quick last question.

Dr. Gregory Taylor
Please Darrah, yes.

Darrah Blackwater
Can y'all talk about a little bit of what that first right of refusal would look like from a policy standpoint? Where would that go? What does what would it look like?

Dr. Gregory Taylor
Really solid question, and I'm going to hope someone else can jump on that, because I don't think I've got an easy answer for it. Laura, want to give it a shot?

Laura Tribe
Oh, is Sally still on the call? Actually, I'd like to hear Sally's take on this.

We can take it, to be continued, as well.

Dr. Gregory Taylor
Sally, are you still out there?

Sally Braun
Yeah, I'm here. Can you hear me?

Dr. Gregory Taylor
Yes.

Sally Braun
Okay. So, we had a situation here on the James Bay coast. We wanted to deploy cellular in a couple of our First Nations. We weren't able to do it because of the spectrum was held by a large telco. When we asked if we could use it, they said, Sure. Give us, I don't know, they wanted something like 350 grand, which we didn't have. I just think that it's fairer, if you're at all interested in the sovereignty of Canada, it's good idea to give the tools to the people who are going to use them in those communities. I just think it's fair, the indigenous people, it's yet to be established or agreed to that they actually own the spectrum, and I don't know by which right that was taken

away from them in the first place. I think it's theirs to give away or sell or whatever or use, it's not the government's. I don't know where the government got the authority to do that.

Dr. Gregory Taylor
Can I ask what happened with that story? Did you get the spectrum after they asked for 350,000?

Sally Braun
No.

Dr. Gregory Taylor
No.

Sally Braun
No. We came up with our own solution, and we're going to deploy that hopefully next year.

Dr. Gregory Taylor
Good.

Sally Braun
Yeah. We're coming in the back door.

Dr. Gregory Taylor
But you found a way in. That's the main thing.

Sally Braun
Yeah. It's called a work around.

Sally Braun
Good. Good, good.

Laura Tribe
Well, I've got I guess we've got our work cut out for us then, or I do anyway.

Dr. Gregory Taylor
Yeah. Will be interesting to see under this new access licensing system, Sally, if you would have had an ability to get that spectrum. I assume that the major provider who owned it wasn't even using it. Am I right?

Sally Braun
No. No, they weren't, they wanted us to pay them to come in and develop it.

Dr. Gregory Taylor
But were they offering service on it themselves?

Sally Braun
No.

Dr. Gregory Taylor
No.

Sally Braun
No. Just sitting there.

Dr. Gregory Taylor
Yeah, they were squatting.

Steve Song
That's exactly what this license would address, this very situation right here. We should write this up. We should document it is part of the submission, because it is totally a case in point, right here.

Dr. Gregory Taylor
Yeah. Sally, you've got a golden submission right here. I do hope that you'll be part of this.

Sally Braun
Can you write it for me?

Dr. Gregory Taylor
Honestly I would love to be in touch with you and try to help you put something together, if we could on this. You've probably got a few people on this call would be willing to help you out. But your voice would would be a significant one on this on this consultation.

Sally Braun
Okay. All right.

Dr. Gregory Taylor
I'm happy to put my email on the list here

Sally Braun
Ok

Dr. Gregory Taylor
Or Mark can send it out either way.

Sally Braun
All right. Thank you. Okay.

Dr. Gregory Taylor
All right. Well, we're a little over time. So I'm going to turn it back to Mark and thanks, everyone.

Mark Buell
Thank you. Thank you to all our panelists. That was an amazing discussion. Yeah, in terms of follow up, I'll be sending an email out probably tonight. We'll also have the recording of the session available. I'll try to include as much information about the consultation itself and and maybe highlight a few interesting submissions to other consultations, there've been a couple posted in the in the chat, but since we're over time, just a huge thank you to everyone, and register for the Indigenous Connectivity Summit if you get a chance. Thanks, everyone.